

IN THE CLAIMS

1. (Previously Amended) A method for detecting an object
of interest in an image processing system, the method comprising
5 the steps of:

generating a difference image;
segmenting the difference image into a plurality of
regions, wherein the difference image is segmented into a
plurality of regions such that each of the regions are bounded
10 by one or more lines passing through the entire image;
identifying one or more silhouette candidates in at
least a subset of the regions; and
detecting the object of interest based at least in
part on the identified silhouettes.

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2. (Original) The method of claim 1 wherein the object of
interest comprises a moving person.

3. (Original) The method of claim 1 wherein the
20 difference image comprises a thresholded difference image
generated by taking a difference between a first image and a
second image and applying binary thresholding to the resulting
difference.

25 4. (Original) The method of claim 1 wherein the
difference image is segmented into a plurality of regions such
that each of the regions are bounded by one or more vertical
lines passing through the entire image.

5. (Original) The method of claim 1 wherein each of the regions of the image which includes a silhouette candidate includes only a single silhouette candidate.

5 6. (Original) The method of claim 1 further including the step of determining saliency values for each of the silhouette candidates using tensor voting.

7. (Original) The method of claim 2 further including the
10 step of detecting a neck position of the moving person by analyzing a sum of x-components of tangents along a corresponding silhouette.

8. (Original) The method of claim 7 further including the
15 step of utilizing the detected neck position to determine at least one of a head position and a head size for the moving person.

9. (Previously Amended) An apparatus for detecting an
20 object of interest in an image processing system, the apparatus comprising:

a camera; and

a processor coupled to the camera and operative (i) to generate a difference image from a signal received from the
25 camera; (ii) to segment the difference image into a plurality of regions, wherein the difference image is segmented into a plurality of regions such that each of the regions are bounded by one or more lines passing through the entire image; (iii) to identify one or more silhouette candidates in at least a subset

of the regions; and (iv) to detect the object of interest based at least in part on the identified silhouettes.

10. (Original) The apparatus of claim 9 wherein the object
5 of interest comprises a moving person.

11. (Original) The apparatus of claim 9 wherein the
difference image comprises a thresholded difference image
generated by taking a difference between a first image and a
10 second image and applying binary thresholding to the resulting
difference.

12. (Original) The apparatus of claim 9 wherein the
difference image is segmented into a plurality of regions such
15 that each of the regions are bounded by one or more vertical
lines passing through the entire image.

13. (Original) The apparatus of claim 9 wherein each of
the regions of the image which includes a silhouette candidate
20 includes only a single silhouette candidate.

14. (Original) The apparatus of claim 9 wherein the
processor is further operative to determine saliency values for
each of the silhouette candidates using tensor voting.

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15. (Original) The apparatus of claim 10 wherein the
processor is further operative to detect a neck position of the
moving person by analyzing a sum of x-components of tangents
along a corresponding silhouette.

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16. (Original) The apparatus of claim 15 wherein the processor is further operative to utilize the detected neck position to determine at least one of a head position and a head size for the moving person.

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17. (Original) The apparatus of claim 9 wherein the image processing system comprises a video conferencing system.

18. (Original) The apparatus of claim 9 wherein the image
10 processing system comprises a video surveillance system.

19. (Original) The apparatus of claim 9 wherein the image processing system comprises a human-machine interface.

15 20. (Previously Amended) An article of manufacture comprising a storage medium for storing one or more programs for detecting an object of interest in an image processing system, wherein the one or more programs when executed by a processor implement the steps of:

20 generating a difference image;
segmenting the difference image into a plurality of regions, wherein the difference image is segmented into a plurality of regions such that each of the regions are bounded by one or more vertical lines passing through the entire image;
25 identifying one or more silhouette candidates in at least a subset of the regions; and
detecting the object of interest based at least in part on the identified silhouettes.

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